

City Manager Approval _____

Date _____

1.0 PURPOSE

1.1 BACKGROUND

The Control of Hazardous Energy Program establishes guidelines, policies, and procedures for lockout and blockout of energy source(s) that could cause injury to personnel. It is the policy of the City of Long Beach to comply with all aspects of the Cal/OSHA requirements for control of hazardous energy specified in Title 8 section 3203, Title 8 section 3314 and Title 8 section 2320.

1.2 SCOPE

The Control of Hazardous Energy Program applies to all City personnel. The Control of Hazardous Energy Program shall apply to all City departments and offices directly responsible to the City Manager. It is also requested that elective offices and other independent offices and departments comply with the Control of Hazardous Energy Program, if affected, in the interest of administrative uniformity.

1.3 POLICY

It is the policy of the City of Long Beach to provide employees with a safe and healthful working environment. In order to achieve this goal, managers and supervisors are required to ensure that all employees conduct activities in accordance with the requirements outlined in this document.

2.0 DEFINITIONS

2.1 Affected Employee: An employee whose job requires him/her to use a machine or piece of equipment on which maintenance is being performed under lockout or whose job requires him/her to work in an area in which such maintenance is being performed.

2.2 Ampere: The unit of measurement for electric current. It represents the rate at which current flows through a resistance of one ohm by a pressure of one volt.

2.3 Authorized Employee: A person who locks out or blocks out machines or equipment in order to perform maintenance on them.

2.4 Current: The flow of electricity in a circuit. It is expressed in amperes and represents an amount of electricity.

2.5 Disconnecting Means: A device, group of devices, or other means by which the conductors of a circuit can be disconnected from their sources of supply.

2.6 Energized: Connected to an energy source or containing residual or stored energy.

2.7 Energy-Isolating Device: A mechanical device that physically prevents the transmission or release of energy, including but not limited to:

- Manually operated circuit breakers
- Disconnect switches

- Manually operated switches by which the conductors of a circuit can be disconnected from all ungrounded supply conductors, and, in addition, no pole can be operated independently.
 - Line valves
 - Blocks
- 2.8 Energy Source: Any electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other source of energy.
- 2.9 Group Lock: One lock that protects a number of persons who are identified on the associated danger tag. This lock shall only protect persons of a single trade. A group lock shall be removed only by the person who placed it, either at task termination or at the end of each work shift, whichever comes first.
- 2.10 Hot Tapping: An authorized procedure for attaching fittings to and penetrating the wall of pipelines or other pressure vessels that are not locked or blocked out.
- 2.11 Lock Abandonment: Termination of work under a lockout procedure without removing a lock. This practice is prohibited.
- 2.12 Lockout: The placement of a lockout device on an energy-isolating device in accordance with an established procedure, thus ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.
- 2.13 Lock Sharing: The practice of two or more persons using the same lock for protection without identifying all persons on the associated tag (see Group Lock). This practice is prohibited.
- 2.14 Mechanical Energy: The kinetic energy associated with the moving parts of mechanical systems. Mechanical energy can be manifested in linear or rotational mechanical motion.
- 2.15 Potential Energy: Stored energy that can be released as hazardous mechanical energy. Potential energy is associated with pressure in pneumatic, hydraulic, and vacuum systems, with springs under tension or compression, and with gravity (e.g., raised loads).
- 2.16 Servicing and Maintenance: Workplace activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining or servicing machines or equipment. These activities include lubricating, cleaning, or unjamming machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.
- 2.17 Tagout: The placement of a tagout device, with a lockout device, on an energy-isolating device in accordance with an established procedure to indicate that a machine may not be started or attempted to be started until the lock and tag are removed.

3.0 RESPONSIBLE PERSONS

3.1 CITY SAFETY OFFICER**3.1.1 The City Safety Officer shall:**

- A. Develop and maintain the Control of Hazardous Energy Program required by the applicable standards.
- B. Provide guidance to departments on the interpretation of this procedure.
- C. Assist with the provisions of training to ensure compliance with this program.
- D. Conduct verification audits to ensure compliance with this procedure.

3.2 MANAGERS, SUPERINTENDENTS, AND SUPERVISORS**3.2.1 Managers, Superintendents, and Supervisors shall:**

- A. Survey their work areas to identify the machine(s), equipment and processes that utilize hazardous energy and that are covered by this Program.
- B. Ensure that equipment-specific energy control procedures are established for the machines, equipment and processes in their area.
- C. Ensure that employees and contractors follow established lockout/blockout/tagout and energy control procedures.
- D. Ensure that employees receive proper training prior to assignment to covered service or maintenance tasks.
- E. Ensure that only authorized employees perform service or maintenance under lockout/blockout/tagout.
- F. Ensure that only qualified persons perform electrical-related work.
- G. Provide protective equipment, hardware and appliances (e.g., locks, lockout devices, keys, tags, etc) conforming to the provisions of this program to employees requiring this equipment.
- H. Designate the authorized employee who has primary responsibility for overall lockout/blockout/tagout control in a group situation.
- I. Maintain exclusive control of duplicate or master keys.
- J. Ensure that periodic inspections (Section 8.0) are conducted and documented.

3.3 AUTHORIZED EMPLOYEES**3.3.1 Authorized Employees shall:**

- A. Follow procedures that have been developed for lockout/blockout/tagout and ensure the proper use of his/her equipment.
- B. Determine the type(s), magnitude(s) and hazards of energy to be controlled, and the method(s) or means to control the energy before commencing the covered service or maintenance task.
- C. Locate and identify all energy isolating devices that will be locked, blocked, or tagged out before commencing the covered service or maintenance task.
- D. Report any lost lockout/blockout/tagout equipment immediately to his/her supervisor.
- E. Inspect his/her own equipment prior to use.

- F. Notify affected employees before lockout/blockout/tagout is performed and then again before energy is restored once servicing or maintenance is complete.
- G. Participate in the development of equipment-specific energy control procedures, and report any problems associated with those procedures.
- H. Attend assigned training sessions.

3.4 AFFECTED EMPLOYEES

3.4.1 Affected employees shall:

- A. Be aware of lockout/blockout/tagout procedures used to guard against unexpected startup.
- B. Not attempt to operate any machines, equipment, or processes which are locked out, blocked out, or tagged out.
- C. Not attempt to remove any locks, blocks, or tags from energy isolating devices.

4.0 LOCKOUT/BLOCKOUT/TAGOUT RULES AND REQUIREMENTS

4.1 LOCKOUT/BLOCKOUT/TAGOUT Rules

Lockout/Blockout/Tagout procedures are required under the following circumstances:

- Cleaning, adjusting, servicing, or repairing machines or equipment containing potentially hazardous energy.
- Cleaning, adjusting, servicing or repairing pipelines carrying any substance that could cause personal injury.

City employees are prohibited from operating any device or component with a lock, block or danger tag attached, or to remove any lock, block, or danger tag except as detailed in this Program.

City employees are prohibited from removing any personal lock, block, or danger tag other than their own. A group lock shall be removed only by the person who placed it. If a personal lock, block, or danger tag must be removed by someone other than the employee owning the lock, block, or tag, then section 5.9 of this document shall be followed.

Only qualified and authorized employees shall work on electrical panels. Access into electrical panels is restricted to qualified and authorized employees.

Any employee violating any part of this Program is subject to discipline per the City's Injury and Illness Prevention Program.

During the servicing or maintenance of machines, equipment, and processes in which unexpected energization, startup, or release of stored energy could occur and cause injury, all sources of hazardous energy will be de-energized, isolated or otherwise effectively controlled and locked or blocked out.

Tagout, without lockout, shall only be used when the energy-isolating device is not capable of being locked out. If tagout is used the following conditions shall be met:

- A. The tagout procedure will provide protection equal to that provided by a lockout procedure through the implementation of additional measures to supplement tags and protect workers. Examples of such measures include:
1. Removing of an isolating circuit element (e.g., fuse).
 2. Retraction of a draw-out circuit breaker from a switchboard (i.e., racking out the breaker).
 3. Blocking a controlling switch (placement of a blocking mechanism over the operating handle of a disconnecting means so that the handle is blocked from being placed in the closed position).
 4. Grounding the circuit upon which work is to be performed.
 5. Removing a valve handle to reduce the likelihood of inadvertent energization.
 6. Opening an extra disconnecting device (e.g., opening of a switch other than the disconnecting means which also opens the circuit between the source of power and the exposed parts on which work is to be performed; or opening of a switch for a control circuit that operates a disconnect that is itself open and disconnected from the control circuit or is otherwise disabled).
 7. Positioning standby personnel at the tagout location.

All locks shall be individually keyed (i.e., the “one lock-one key” rule), and will identify the individual to whom it is assigned. Identification will be accomplished by means of a collar and engraved tag attached to the lock, a durable label, or by using a tag that identifies the employee with the lock. The key to each lockout device will be in the sole possession of the employee to which it was assigned.

EXCEPTION: Supervisors may have duplicate keys (or a master key) for the locks assigned to authorized employees under their supervision. Where duplicate master keys are used, the supervisor will restrict and control access to the duplicate or master keys by keeping them in a locked key cabinet or other locked storage to which unauthorized employees do not have access.

For shift or personnel changes during a lockout/blockout/tagout, continuous protection will be maintained, and there will be an orderly transfer of lockout/blockout/tagout devices between the first (off-going) employee(s) and the relief employee(s).

Before performing any service or maintenance on cord and plug connected electrical equipment, the cord shall be unplugged and the plug maintained under the exclusive control of the employee performing the servicing and/or maintenance. The plug will be considered to be under the exclusive control of the employee if it is physically in the possession of the employee, or within arms reach and in line of sight of the employee, or if the employee has affixed a personal lockout device on the plug.

Where applicable, piping will be blanked and/or valves will be closed, chained, and locked and tagged.

Whenever major replacement, repair, renovation or modification of machines or equipment is performed, the energy-isolating device will be designed to accept a lockout device.

No new machines or equipment which utilize hazardous energy will be purchased or installed unless appropriate energy-isolating device(s) that are capable of being locked out are provided. Procuring managers are responsible for ensuring that this requirement is met when purchasing equipment.

4.2 EQUIPMENT LOCKOUT REQUIREMENTS

Equipment shall be taken out of service only after notification of and authorization by the person(s) responsible for controlling the equipment, and through one of the following methods: Lockout and Tagout or Blockout and Tagout prior to work. If a lock is placed by the person responsible for controlling the equipment, this lock shall be placed first and removed last.

Each person performing work on equipment shall be protected from that equipment by Lockout/Blockout/Tagout procedures.

Low voltage electrical breakers (600 volts or less) for equipment may be locked out and tagged out by the person(s) responsible for controlling the equipment and/or trades performing work on the equipment.

High voltage breakers (more than 600 volts) shall be initially locked out and tagged out by a qualified and authorized employee, using a multilock adapter/hasp. Persons shall contact the appropriate supervisor if a breaker's voltage is in question.

4.3 PIPELINE LOCKOUT REQUIREMENTS

Certain pipeline contents can cause explosion, fire, toxic exposure, flooding of confined spaces or other hazards if released into the work area. These include:

- Flammable gases including but not limited to natural gas and propane.
- Liquid or gaseous chlorine.
- Low and high pressure steam.
- Sodium hypochlorite, calcium hypochlorite or sodium bisulfite.
- Pipeline contents with the potential to inundate a confined space with a liquid.
- Pipeline contents with the potential to create oxygen deficient or oxygen enriched atmospheres.
- Any other pipeline contents that could result in personal injury.

5.0 LOCKOUT/BLOCKOUT/TAGOUT PROCEDURE

5.1 PREPARATION FOR LOCKOUT/BLOCKOUT/TAGOUT

- A. All personnel affected by the intended service or maintenance task to be performed under lockout/blockout/tagout will be notified by the supervisor or authorized employee before work is commenced.
- B. Before commencing work, the authorized employee will determine the type(s), magnitude, and hazards of energy to be controlled, and the method(s) or means

to control the energy. The authorized employee will locate and identify all energy isolating devices that will be locked out, blocked out, or tagged out.

5.2 APPLICATION OF LOCKOUT/BLOCKOUT/TAGOUT

- A. The authorized employee must verbally notify employees who work in the area that a lockout/blockout/tagout procedure is going to be used.
- B. Shut the machine or equipment down by the normal stopping procedure.
- C. Operate all energy-isolating devices so that the machine/equipment is isolated from all energy sources.
- D. Dissipate or restrain all stored energy. Methods of dissipating or restraining stored energy include, but are not limited to, repositioning, blocking, bleeding down, etc. Stored electric energy which might endanger personnel shall be released. Capacitors will be discharged and high capacitance elements will be short-circuited and grounded if the stored energy might endanger personnel.
- E. Lockout/blockout/tagout the energy-isolating device(s) with assigned individual lock(s) according to the method(s) selected.
- F. Verify that the machine(s), equipment, or process has been effectively isolated and de-energization of the machine(s), equipment, or process has been accomplished.

5.3 VERIFICATION OF ISOLATION

- A. Prior to starting work on the machine(s), equipment, or process that have been locked/blocked/tagged out, the authorized employee will verify that isolation and de-energization of the machine(s), equipment, or process has been accomplished. This step of the procedure may involve a deliberate attempt to start the equipment which has been isolated, the use of appropriate test instruments, or visual inspection. A combination of these verification methods may be needed; the appropriate method or combination of methods will depend upon the type of machinery or equipment involved, the complexity of the system, or other factors.

For example, after ensuring that no employee(s) is exposed, an authorized employee may operate the equipment operating controls to verify that the equipment cannot be restarted.

- B. Verification of energy isolation shall be monitored as frequently as necessary if there is a possibility of re-accumulation of stored energy.

5.4 RELEASE FROM LOCKOUT/BLOCKOUT/TAGOUT

- A. After the servicing and/or maintenance is complete and the equipment is ready to be re-energized and/or made ready for normal production operations, an authorized employee will verify the following so that the machine(s), equipment, or process can be safely energized:
 - 1. All employees are clear of the machine(s), equipment, or process.
 - 2. The equipment is operationally intact.
 - 3. Non-essential items (e.g., tools, jumpers, shorts, grounds and other such devices) have been removed.
 - 4. All guards, safety devices, etc. have been reinstalled.
- B. Before the removal of locks, blocks, and/or tags and the restoration of energy, employees exposed to hazards associated with re-energizing the machine(s),

equipment, or process (i.e., affected employees) will be warned to stay clear of circuits and equipment and notified that the lockout/blockout/tagout devices will be removed.

- C. Remove lockout/blockout/tagout devices.
- D. Operate the energy-isolating devices to restore energy.

5.5 LOCKOUT/BLOCKOUT/TAGOUT INTERRUPTION

- A. In situations where the energy-isolating device(s) is locked/blocked/tagged and there is a need for energized testing or positioning of the machine(s), equipment, or process, the following additional sequence will apply:
 - 1. Clear the machine(s), equipment, or process of tools and materials.
 - 2. Clear all personnel.
 - 3. Clear the energy-isolating device(s) of locks/blocks/tags according to the established procedure.
 - 4. Proceed with testing, positioning.
 - 5. De-energize and re-lock/block/tag energy-isolating device(s) to continue the work.
 - 6. Verify isolation and de-energization of the machine(s), equipment, or process by use of appropriate means as described in Section 5.3 of this Program.

5.6 GROUP LOCKOUT/TAGOUT

- A. When more than one individual is required to lock and tagout a machine(s), equipment, or process, a group lockout/tagout procedure will be followed. Where group lockout and tagout is used, primary responsibility for the safety of a set number of employees working under the protection of group lockout will be vested in one authorized employee (e.g., group lockout/tagout "Coordinator"). The group lockout/tagout Coordinator is responsible for: overall lockout/tagout control; coordinating the affected workforces; and ensuring the continuity of protection during the work period. Group lockout/tagout coordinators will be assigned by a supervisor or manager. Specific procedural steps identified for the particular lockout will be followed.
- B. The following general rules will be followed in group lockout/tagout situations:
 - 1. Where applicable, each authorized employee will place his/her personal lockout/tagout device on the energy-isolating device(s).
 - 2. When an energy-isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (e.g., hasp) will be used.
 - 3. Each authorized employee will remove his/her own device(s) when he/she stops working on the equipment.
 - 4. In certain cases, (i.e., where prescribed by a specific energy control procedure), a single lock may be used to lock out the machine, equipment, or process to minimize the number of personnel exposed to potentially hazardous equipment, with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. With the box or cabinet in a designated safe area, each authorized employee may then attach his/her own lock to secure the box or cabinet. As each person no longer needs to maintain his/her lockout protection, that person will remove his/her lock from the box or cabinet.

5.7 SHIFT OR PERSONNEL CHANGES

- A. Specific procedures will be developed and used during shift or personnel changes to ensure the continuity and orderly transfer of lockout/blockout/tagout protection. In this regard, a “handshake” approach for transfer of lockout/blockout/tagout protection may be used. Under this method, off-going personnel will not leave the job site until the on-coming personnel attach their locks, blocks, or tags to the appropriate isolating device(s). Verbal and/or written information will also be exchanged relative to the work in progress and the equipment’s energy control status. The authorized employee, with primary responsibility for the group, will also be informed regarding the reason for lock removal and individuals involved with the switch.

5.8 CONTRACTORS AND OUTSIDE PERSONNEL

- A. Whenever non-City servicing personnel are engaged in lockout/blockout/tagout activities, the City’s personnel and the outside employer’s personnel will inform each other of their respective lockout/blockout/tagout procedures.
- B. When contractor employees perform service or maintenance activities on City equipment which requires lockout/blockout/tagout, application of a “control” lock by a qualified and authorized City employee may be required. Where applicable, the City control lock will be applied first, will remain in place for the duration of the job, and will be the last removed from the energy-isolating device(s).

5.9 EMERGENCY REMOVAL OF LOCKOUT/BLOCKOUT/TAGOUT DEVICES

- A. During emergencies or other times when the authorized employee who applied a lockout/blockout/tagout device is not available to remove it (or cannot be identified), and there is an urgent need to remove the device, that device may be removed by his/her supervisor provided that the following steps are performed:
 - 1. The supervisor must make a determined effort to locate the authorized employee and must verify that he/she is not at the facility. In case of an abandoned or unidentified lock, all reasonable efforts will be made to identify the owner.
 - 2. The supervisor must make every reasonable effort to contact the authorized employee who placed the device. This should include a telephone call to the employee’s home or other location.
 - 3. If the employee is contacted, the supervisor must inform the employee that his/her device(s) are being removed.
 - 4. When removing the device(s), another authorized employee must accompany the supervisor.
 - 5. The supervisor and accompanying authorized employee must verify that it is safe to remove the device(s).
 - 6. The supervisor may then use a master or duplicate key to remove the lockout device(s), or the lock may be cut off if the key is not available.
 - 7. The supervisor will ensure that the authorized employee is informed about the removal of the device before he/she resumes work at the facility. The authorized employee will be presented with the removed lock and informed of the reasons for the emergency removal upon his/her return to work.

5.10 PIPELINE BLOCKOUT PROCEDURE

- A. Blockout methods for pipelines vary according to the substances, processes, equipment, and hazards involved. Blockout methods selected for pipelines in Section 4.3 must be the result of an evaluation giving priority to isolation of hazardous substances from areas where persons will be working. The supervisor responsible for controlling the pipeline and the supervisor responsible for performing cleaning, adjustment, service or repair on the pipeline shall evaluate the task together and develop blockout procedures to ensure that persons are protected.
- B. One or more of the following lock and tag methods shall be utilized for blockout:
- Danger tags with locks
 - Chains wrapped and locked around valve operators
 - Locked valve covers
 - Tag only when the other methods are not practical
- C. Approved methods for blocking out pipelines include, but are not limited to:
- Backfilling a pipe with water;
 - Closing one or two valves, then draining product out of the pipe;
 - Flushing a pipe with water, then draining;
 - Installing a blank (blind) at a pipe joint;
 - Removing a section of pipe, then installing blanks;
 - Removing the source of product, then purging the pipeline;
 - Releasing pressure from a pipeline;
 - Ventilating a pipeline;
 - Installing mechanical plugs;
 - Installing inflatable plugs; and/or
 - Installing stop logs.

Note: Making connections to lines under pressure (hot tapping) may be performed by qualified individuals on pipelines without lockout/blockout/tagout procedures, subject to approval of line supervisors.

5.11 ENERGY CONTROL FOR MOTOR VEHICLES AND EQUIPMENT DURING MAINTENANCE AND ADJUSTMENTS

- A. To prevent injury due to contact with exposed moving parts such as fans, belts, pulleys, and driveshafts, the vehicle or equipment should be shut down or turned off when possible during the service or maintenance, and all moving parts should be allowed to come to a complete stop.
- B. Vehicles or equipment may be locked out by removing the ignition key (must be in control of primary mechanic working on the vehicle or equipment) or by disconnecting the positive battery cable. Employees disconnecting battery cables must avoid making contact with the chassis ground when using a metal tool in the process of disconnection and should always remove the negative cable first. If the removal of the negative cable accomplishes isolation of energy then the positive cable does not have to be removed. Vehicles, with more than one battery, shall have all batteries disconnected if there is a lack of knowledge by the employee as to which circuits are fed by the batteries.
- C. To prevent movement of the vehicle, the brakes should be set and wheels should be chocked as necessary. If the vehicle is raised to perform work

underneath, jacks, stands, or other blocking devices must be used to prevent the vehicle from falling in case the hoist or jack fails or the control levers are inadvertently struck and the load released. When a person is working under a blocked-up vehicle, other employees shall not engage in any activities that may cause the car to fall off its jacks.

- D. When an automotive lift is used to raise a vehicle to perform work, the lift should be equipped with appropriate safety devices such as blocking pins or ratchet mechanisms to prevent the lift and/or suspended vehicle from falling due to hydraulic or mechanical failure. Employees shall verify that the safety device is properly engaged and working before working beneath the raised vehicle. If necessary, drivetrain components such as transmissions, transfer cases, and axles should be supported to prevent them from falling.
- E. To protect against burns, hot parts such as the engine block, radiator, and exhaust components should be allowed to cool if possible or insulating gloves or blankets should be used for protection. When opening a radiator, steam should be bled off before fully opening the cap.
- F. Vehicle adjustments must be made while the vehicle is de-energized, unless absolutely necessary. If this is not possible, however, as is the case with certain diagnostic procedures that require the engine to be running, alternative steps must be taken to protect employees from harm. Guards may only be removed if it is necessary to do so in order to perform the diagnostic procedures and must be replaced as soon as possible. Employees shall not wear jewelry or loose-fitting clothing that could be caught in moving parts.
- G. To control electrical energy, removal, tagging and/or locking of battery leads may be necessary.
- H. Springs may need to be compressed, relaxed, or secured to control the stored energy.
- I. Components that could move or fall must be blocked.

6.0 ENERGY CONTROL PROCEDURES

When lockout/blockout/tagout is required, specific written energy control procedures will be developed and used for each machine, piece of equipment, or process by the department that has ownership of the machine, equipment, or process. Energy control procedures may be developed on an as-needed basis for infrequent work, however, they must be in place even if the work is considered emergency.

Energy Control Procedures should include:

- A. A specific statement of the intended use of the procedure;
- B. The type(s) and magnitude(s) of hazardous energy associated with the machine(s), equipment, or process;
- C. The type(s) and location(s) of the isolating device(s);
- D. Involved personnel;
- E. Specific procedural steps for shutting down, isolating, blocking, and securing machines or equipment to control hazardous energy.
- F. Specific procedural steps for the placement, removal, and transfer of lockout/blockout/tagout devices and the responsibility for them;
- G. Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices and other energy control measures; and

- H. The specific steps for re-energizing the machine or equipment and restoring it back to normal operation.

Note: The attached form or equivalent may be used to document Energy Control Procedures.

Authorized employees will follow the specific energy control procedure when performing lockout/blockout/tagout on a piece of equipment or machinery.

The specific procedures will be modified as necessary to reflect changes in the equipment, the method of isolation, the energy sources, and/or authorized employees.

7.0 EMPLOYEE TRAINING

7.1 AUTHORIZED EMPLOYEES

- A. Training will be provided to authorized employees to ensure that they understand the purpose and function of this Program and have the knowledge and skills required for the safe application, use, and removal of energy controls.
- B. Each authorized employee will receive training in the recognition of applicable hazardous energy sources, the type(s) and magnitude of the energy available in the workplace, the methods and means necessary for energy isolation and control, and the means of verification of control.
- C. When tagout systems are used, employees will be trained in the limitations of tags pursuant to 29 CFR 1910.147(c)(7)(C)(ii).
- D. Retraining will be provided whenever there is a change in job assignment, a change in machines, equipment, or processes that present a new hazard, or when there is a change in the energy control procedures or revision of control methods. Additional retraining will also be conducted whenever a verification audit or supervisory observation of the energy control procedures indicates deviation from or inadequacies in an employee's knowledge or use of the energy control procedures.

7.2 AFFECTED EMPLOYEES

- A. Each affected employee will be instructed in the purpose and use of this Program and the prohibition relating to attempts to restart or re-energize machines, equipment, or processes which are locked out, blocked out, or tagged out.

8.0 PERIODIC INSPECTIONS

An inspection of each energy control procedure will be conducted at least annually by the supervisor or designee (designee may only be an authorized employee). If the person performing the inspection is an authorized employee, the authorized employee must be an employee not using the energy control procedure.

The inspection will include a review between the inspector and each authorized employee (and affected employee if a tagout system alone is used) of the employee's responsibilities under the energy control procedure being inspected. The inspection will determine the following:

- Whether the steps in the energy control procedure are being followed;

- Whether the employees involved know their responsibilities under the procedure; and
- Whether the procedure is adequate to provide the necessary protection, and what changes, if any, are needed.

The supervisor will ensure that appropriate action is taken to ensure that any deficiencies identified during the inspection are corrected.

The supervisor will certify that the periodic inspections have been performed. The certifications will identify the machine or equipment on which the energy control procedure was being utilized, the date of the inspection, the employees included in the inspection, and the person performing an inspection. The attached *Lockout/Blockout/Tagout Periodic Inspection Certification Form* may be used for this purpose. A copy of the inspection shall be sent to the City Safety Officer for review.

9.0 PROTECTIVE MATERIALS AND HARDWARE

Locks, tags, chains, wedges, key blocks, adapter pins, self-locking fasteners, or other hardware shall be provided as necessary for isolating, securing, or blocking of machines or equipment from energy sources.

Lockout devices will be singularly identified; will be the only device(s) used for controlling energy; will not be used for other purposes; and will meet the following requirements:

A. Durable

1. Lockout/blockout/tagout devices will be capable of withstanding the environment to which they are exposed for the maximum amount of time that exposure is expected.
2. Tagout devices will be constructed and printed so that exposure to weather conditions or wet/damp locations will not cause the tag to deteriorate or the message on the tag to become illegible.
3. Tags will not deteriorate when used in corrosive environments such as areas where acid or alkali chemicals are handled and stored.

B. Standardized

1. Lockout and tagout devices shall be standardized within the facility in at least one of the following criteria: color, shape, size, and additionally, in the case of tagout devices, print and format will be standardized.

C. Substantial

1. Lockout and tagout devices will be substantial enough to prevent removal without the use of excessive force or unusual techniques, such as with the use of bolt cutters or other metal cutting tools.
2. Tagout devices, including their means of attachment, will be substantial enough to prevent accidental or inadvertent removal. Tagout device attachment means will be of non-reusable, attachable by hand, self-locking, and non-releasable with a minimum unlocking strength of no less than 50 pounds and having the general design and basic characteristics of being at least equivalent to a one-piece all-environment-tolerant nylon tie cable.

D. Identifiable

1. Lockout and tagout devices will indicate the identity of the employee applying the device(s).

Tagout devices will warn against hazardous conditions if the machine or equipment is energized and will include a legend such as the following: Do Not Start, Do Not Open, Do Not Close, Do Not Energize, or Do Not Operate.